April 13, 1926. 1,580,699

H. E. STEVENSON

MACHINE FOR CLEANING AND OPENING UP ASBESTOS FIBER

Filed June 14, 1924

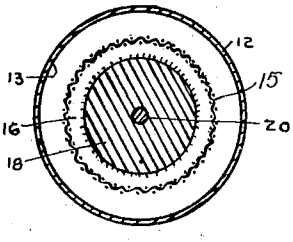


FIG. 3.

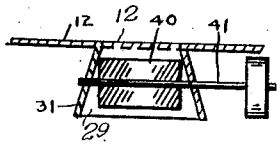


FIG. 4.

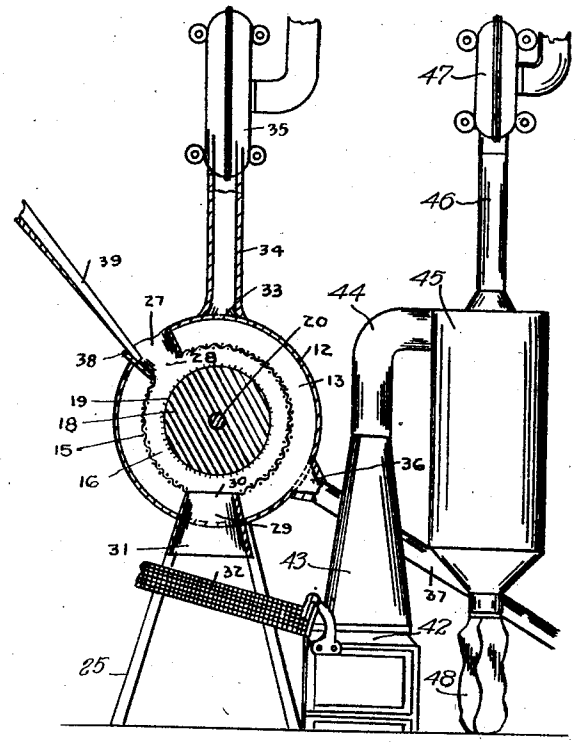


FIG. 2.

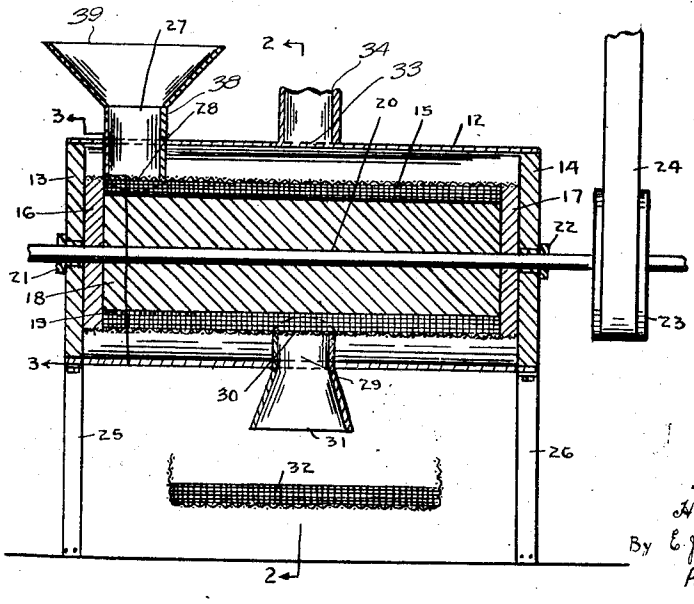


FIG. 1.

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UNITED STATES PATENT OFFICE.

HENRY EDWARD STEVENSON, OF THETFORD MINES, QUEBEC, CANADA.

MACHINE FOR CLEANING AND OPENING UP ASBESTOS FIBER.

Application filed June 14, 1924. Serial No. 720,083.

To all whom it may concern:

Be it known that I, HENRY EDWARD STEVENSON, a subject of the King of Great Britain, and residing at Thetford Mines, in the Province of Quebec, in the Dominion of Canada, have invented a new and useful Machine for Cleaning and Opening Up Asbestos Fiber, of which the following is the specification.

The invention relates to machine for cleaning and opening up asbestos fiber, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of the novel features of construction pointed out broadly and specifically in the claims for novelty following a description containing an explanation in detail of an acceptable form of the invention.

The objects of the invention are to clean and separate the asbestos fiber or any matted material in a single operation; to rid the fiber of both its own and foreign dust and save the former while dispersing the latter, to increase production in mills and factories requiring a machine of this type; to insure efficiency in operations of the kind whereby the work will be carried on automatically from the feed to the delivery of the separated fiber; and generally to provide a serviceable, durable and economical machine.

In the drawings, Figure 1 is a longitudinal and vertical sectional view of the machine and its connections.

Figure 2 is a cross sectional view on the line 2—2 in Figure 1 showing various connections.

Figure 3 is a cross sectional view on the line 3—3 in Figure 1.

Figure 4 is a sectional detail showing an attachment for special conditions.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings, the casing is preferably formed of a sheet metal cylinder 12 secured to the wooden circular heads 13 and 14 and the cylindrical screen is preferably formed of the screen 15 secured to the circular wooden heads 16 and 17 of smaller diameter than the heads 13 and 14.

The roller 18 having the picks 19 projecting outwardly from the periphery thereof is mounted on the shaft 20 projecting through the heads 13 and 16 and 14 and 17 and journalled in the bearings 21 and 22, said shaft having the driving pulley 23 mounted thereon connected by the belt 24 to a suitable source of power.

The heads 16 and 17 are mounted in the standards 25 and 26 or in any other suitable way so long as the machine is held perfectly rigid.

The feed passage 27 leads through the cylinder 12 towards one end and terminates at the inlet opening 28 in the screen 15, thereby providing for the admittance of the raw fiber to the roller, 18, said fiber after being thoroughly opened and cleaned by the action of the roller 18 ultimately reaching the delivery passage 29, which leads from the outlet opening 30 in the screen 15 about midway of the length of said screen and flares outwardly to the bell mouth 31, which is directly over the usual vibratory screen 32 common to all mills in this particular art.

The dust outlet 33 from the cylinder 12 is situated about midway of the length of said cylinder and the suction conduit 34 extends from said opening to and through the conduit fan 35 to the air. The heavy dust outlet 36 is about midway of the length of said cylinder 12 and is situated towards the bottom and the suction conduit 37 extends therefrom to a receptacle for this dust which is largely composed of asbestos and preferably drawn by a suction member.

The hopper 38 is secured to the feed passage 27 and the feed trough 39 or other feed member directs the asbestos fiber into the hopper 38, from which it passes into the passage 27 and through the inlet 28 on to the rotating roller 18 being taken up by the picks 19 and thoroughly combed out and fluffed until it reaches the outlet 30 through which it drops to the screen 32, the rest of its travel being common mill practice. Meanwhile the dust occasioned by the separation is picked up by the suction, the light dust of foreign material being dispersed to the air and the heavier dust being conserved for other uses.

It is necessary under some conditions to retard the delivery particularly where the fiber is damp so that the treatment will be continued for a longer period and to do this the rotatable vane 40 is mounted on the driven shaft 41 are used these being operated in the outlet passage by means of a suitable connection to the driving power of the ma-

chine whereby the rotation of these vanes casts the outflowing fiber back into the machine and also prevents the choking of the outlet passage.

The fiber is delivered to the agitating pan 32 from which it passes to the table 42 and from there is drawn through the hood 43 and suction pipe 44 into the receptacle 45 having a delivery pipe 46 from a blower 47 at the upper end of said receptacle and a detachable bag 48 at the lower end. The blower 47 delivering into the receptacle 45 produces a suction in the hood 43 and pipe 44 and also drives the fiber into the detachable bag 48 which is emptied from time to time.

What I claim is:—

1. A machine for cleaning and opening up asbestos fiber comprising a pair of stationary cylindrical casings concentric with a roller rotating in a path concentric with said casings the intermediate casing forming a screen between said roller and the outer casing and having a raw material inlet and a fiber outlet registering with similar openings in the outer casing, said outer casing having a plurality of dust outlets adapted to accommodate light and heavy dust.

2. A machine for cleaning and opening up asbestos fiber comprising a pair of stationary cylindrical casings concentric with a roller rotating in a path concentric with said casings, said roller having picks around the periphery thereof; the intermediate casing forming a screen between said roller and the outer casing and having a raw material inlet and a fiber outlet registering with similar openings in the outer casing, said outer casing having a plurality of dust outlets adapted to accommodate light and heavy dust.

3. A machine for cleaning and opening up asbestos fiber comprising a pair of stationary cylindrical casings concentric with a roller rotating in a path concentric with said casings the intermediate casing forming a screen between said roller and the outer casing and having a raw material inlet and a fiber outlet registering with similar openings in the outer casing, said outer casing having a plurality of dust outlets adapted to accommodate light and heavy dust.

4. A machine for cleaning and opening up asbestos fiber comprising a pair of stationary cylindrical casings concentric with a roller rotating in a path concentric with said casings, the intermediate casing forming a screen between said roller and the outer casing and having a raw material inlet and a fiber outlet registering with similar openings in the outer casing said outer casing having a plurality of dust outlets, one of said outlets having a suction member connected thereto and secured to the outside of said outer casing and adapted to accommodate light dust and said other outlet secured at the lower portion of the casing and having a chute therefrom and providing an exit for the heavy dust.

Signed at Montreal, this 19th day of May, 1924.

HENRY EDWARD STEVENSON.

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